What Is Claimed Is:

1. A motor power supply including a DC power supply part having a pair of power supply terminals, and an inverter having a pair of connection terminals connected to each other by an additional line, respectively, connected to the pair of power supply terminals of the DC power supply part to receive DC power from the DC power supply part and to supply AC power to a motor, the motor power supply comprising:

an additional line connecting the pair of connection terminals to each other;

a breaking resistor disposed in the additional line connecting the pair of connection terminals to each other;

a control switching element disposed in serial with the breaking resistor in the additional line;

a breaking switch disposed to one of the connection terminals and switching to either a normal position connecting the one of the connection terminals to a corresponding power supply terminal, or a breaking position connecting the one of the connection terminals to the additional line;

a motor speed detector detecting a speed of the motor; and

a control part controlling the breaking switch to switch to the breaking position and controlling the control switching element so that an on-off interval of the control switching element is controllable depending on the speed detected by the motor speed detector, when the motor is in a dynamic breaking mode.

2. The motor power supply according to claim 1, further comprising:

an over voltage protection resistor having a side connected between the breaking resistor and the control switching element, and a remaining side connected to the one connection terminal to be placed in series with the control switching element;

a capacitor disposed in the DC power supply part and receiving a voltage from the motor; and

an over voltage detector detecting an over voltage across opposite ends of the capacitor, and

wherein the control part controls the breaking switch to switch to the normal position and turns the control switching element on when the over voltage detector detects the over voltage across the opposite ends of the capacitor.

3. The motor power supply according to claim 2, further comprising:

a diode disposed, in parallel, with the over voltage protection resistor, having a cathode connected to the one connection terminal of the inverter to which the over voltage protection resistor is connected.

4. The motor power supply according to claim 1, wherein the control part controls the breaking switch to switch to the normal position when the motor is in a driving mode.

5. The motor power supply according to claim 2, wherein a resistance value of the breaking resistor is smaller than that of the over voltage protection resistor.

6. The motor power supply according to claim 3, wherein a resistance value of the breaking resistor is smaller than that of the over voltage protection resistor.

7. The motor power supply according to claim 1, wherein the breaking switch is a relay having a first contact point where the breaking switch switches to the normal position and a second contact point where the breaking switch switches to the breaking position.

8. The motor power supply according to claim 2, wherein the breaking switch is a relay having a first contact point where the breaking switch switches to the normal position and a second contact point where the breaking switch switches to the breaking position.

9. The motor power supply according to claim 3, wherein the breaking switch is a relay having a first contact point where the breaking switch switches to the normal position and a second contact point where the breaking switch switches to the breaking position.

10. The motor power supply according to claim 4, wherein the breaking switch is a relay having a first contact point where the breaking switch switches to the normal position and a second contact point where the breaking switch switches to the breaking position.

11. A power supply including a DC supply part having a pair of first terminals, and an inverter having a pair of second terminals, respectively, connectable to the pair of first

terminals to supply AC power to a motor, the power supply comprising:

a switching element;

a wire connectable across the pair of the second terminals;

a breaking resistor disposed in serial with the switching element in the wire;

a breaking switch disposed to connect one of the pair of the second terminals to one of a corresponding one of the first terminals, in a normal position of the breaking switch and the wire, in a breaking position of the breaking switch;

a speed detector detecting a speed of the motor; and

a control part controlling the breaking switch to switch to the breaking position and the switching element so that an on-off interval thereof depends on the speed detected by the speed detector, when the motor is in a dynamic breaking mode.

12. A power supply including a DC supply unit connected to an inverter to supply AC power to a motor, the power supply comprising:

a series of a switching element and a breaking resistor connectable across input terminals of the inverter;

a breaking switch disposed to connect one of the input terminals of the inverter to one of the DC supply unit, in a normal position of the breaking switch and the series of the switching element and breaking resistor;

a speed detector detecting a speed of the motor; and

a control part controlling the breaking switch and the switching element so that the breaking switch is switched to the breaking position and on-off interval of the switching element

depends on the speed detected by the speed detector, when the motor is in a dynamic breaking mode.

13. The power supply according to claim 12, wherein:

the speed detector comprises:

an encoder coding an angle of a rotation position of the motor and calculating a rotation position and a speed of the motor based on an encoded signal, and providing the control part with information of the speed and the angle of the rotation position of the motor.

14. A power supply including a DC supply unit connected to an inverter to supply AC power to a motor, the power supply comprising:

a series of a switching element and a breaking resistor connectable across input terminals of the inverter;

a breaking switch disposed to connect one of the input terminals of the inverter to one of the DC supply unit and the series; and

a control part detecting the speed of the motor and controlling a switching interval of the switching element according to the detected speed.

15. The power supply according to claim 14, further comprising:

an over voltage protection resistor having one side connected between the breaking resistor and the control switching element, and a remaining side connected to a respective one of the input terminals of the inverter to be serially connected with the switching element across

the input terminals of the inverter;

an over voltage detector detecting an over voltage across output terminals of the DC supply unit, and

wherein the control part controls the breaking switch to connect the respective one of the input terminals of the inverter to a respective one of the output terminals of the DC supply unit and turns the switching element on when the over voltage detector detects the over voltage across the output terminals of the DC supply unit.

16. The power supply according to claim 15, further comprising:

a diode disposed, in parallel, with the over voltage protection resistor, having a cathode connected to the one input terminal of the inverter to which the over voltage protection resistor is connected.

17. The power supply according to claim 14, wherein the control part controls the breaking switch to switch to the DC supply unit when the motor is in a driving mode.

18. The power supply according to claim 15, wherein a resistance value of the breaking resistor is smaller than that of the over voltage protection resistor.

19. The power supply according to claim 16, wherein a resistance value of the breaking resistor is smaller than that of the over voltage protection resistor.

20. The power supply according to claim 14, wherein the breaking switch comprises:

a relay having a first contact point where the breaking switch switches to the DC supply unit and a second contact point where the breaking switch switches to the series of the breaking resistor and the switching element.

21. The power supply according to claim 15, wherein the breaking switch comprises:

a relay having a first contact point where the breaking switch switches to the DC supply unit and a second contact point where the breaking switch switches to the series of the breaking resistor and the switching element.

22. The power supply according to claim 16, wherein the breaking switch comprises:

a relay having a first contact point where the breaking switch switches to the DC supply unit and a second contact point where the breaking switch switches to the series of the breaking resistor and the switching element.

23. The power supply according to claim 14, further comprising:

an inrush-current protection circuit to prevent an inrush-current from being generated on an initial supply of power to the DC supply unit.

24. The power supply according to claim 21, wherein:

the DC supply unit comprises:

a capacitor connected across the output terminals of the DC supply unit; and

the inrush-current protection circuit comprises:

an inrush-current protection resistor reducing the inrush-current into the DC supply unit, and

an inrush-current protection relay turned off so that a rectified voltage of the DC supply unit is transferable to the capacitor by passing through the inrush-current protection resistor, or turned on so that the rectified voltage is transferable to the capacitor without passing through the inrush-current protection resistor.

25. The power supply according to claim 14, wherein:

the switching element comprises:

a MOS transistor or a field effect transistor and is switchable depending on a gate input signal; and

the control part controls the gate input signal to the switching element so as to turn on or turn off the switching element to change an interval between a turning on and a turning off of the switching element.

26. The power supply according to claim 13, wherein the control part comprises:

a speed detector to detect an angle of a rotation position of the motor and to calculate a rotation position and a speed of the motor.

27. The power supply according to claim 13, wherein, while the motor is in a driving mode, rotational energy stored by the motor regenerates in the DC supply unit through the inverter.

28. The power supply according to claim 15, wherein, when the over voltage detector detects the over voltage across the output terminals of the DC supply unit, the control part keeping the breaking switch connected to a first contact point to turn on the switching element and, when the over voltage detector detects no over voltage across the output terminals of the DC supply unit, the control part turning off the switching element so that current bypass the over voltage protection resistor.

29. The power supply according to claim 28, wherein, if a voltage across the output terminals of the DC supply unit reaches a maximum limit, the control part keeping the breaking switch connected to the first contact point and turning on the switching element to decrease the voltage across the output terminals of the DC supply unit.

30. The power supply according to claim 29, wherein the control part controlling the switching element so that a variation of the voltage applied across the output terminals of the DC supply is limitable within a range and operates the switching element within the range to decrease a malfunctioning of the switching element due to noise.

31. The power supply according to claim 28, wherein the control part connecting the breaking switch to the second contact point when the motor makes a sudden stop or the motor stops driving when power is not applied.

32. The power supply according to claim 14, wherein a portion of the current flowing in the motor flowing through a diode of the inverter and the breaking resistor resulting in a shortening of the power connection terminals of the motor.

33. The power supply according to claim 29, wherein, a turn-on time of the switching element is shorter, as the motor rotates faster, and, the turn-on time of the switching element is longer, as the motor rotates slower.

34. The power supply according to claim 29, wherein, a duty ratio of the switching element decrease, as the speed of the motor increases, and, the duty ratio of the switching element increases, as the speed of the motor decreases.

35. The power supply according to claim 14, wherein the motor is a single phase motor or a multi-phase motor.